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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,328	07/23/2003	Sebastien Weitbruch	PD020074	7767

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EXAMINER
BRAUTIGAM, ALYSA N

ART UNIT	PAPER NUMBER
2676	

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/625,328	WEITBRUCH ET AL.
	Examiner	Art Unit
	Alysa N. Brautigam	2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _23 July 2003_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-16_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-16_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _29 April 2004_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _7/23/2003_.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1.   The drawings are objected to because Figure 4 is not adequately discussed in

the specification. Specifically, page 12, lines 8-16 provide some discussion of Figure 4

but do not specifically disclose the item number of the frame memory (line 9 and item 19

in the figure) and do not adequately provide the functional details necessary to

understand how and when the newly disclosed frame memory functions in relation to

the other components. Corrected drawing sheets in compliance with 37 CFR 1.121(d)

are required in reply to the Office action to avoid abandonment of the application. Any

amended replacement drawing sheet should include all of the figures appearing on the

immediate prior version of the sheet, even if only one figure is being amended. The

figure or figure number of an amended drawing should not be labeled as "amended." If

a drawing figure is to be canceled, the appropriate figure must be removed from the

replacement sheet, and where necessary, the remaining figures must be renumbered

and appropriate changes made to the brief description of the several views of the

drawings for consistency. Additional replacement sheets may be necessary to show the

renumbering of the remaining figures. Each drawing sheet submitted after the filing date

of an application must be labeled in the top margin as either "Replacement Sheet" or

"New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the

examiner, the applicant will be notified and informed of any required corrective action in

the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2.   The abstract of the disclosure is objected to because of the following:

- Extraneous reference to Fig. 3

- Reference to the item number of the motion estimator should be removed

- Language should be changed to better enable understanding of the

  claimed invention

Correction is required. See MPEP § 608.01(b).

3.   The disclosure is objected to because of the following informalities:

- Page 2, lines 19-21 – Requires rewording for improved clarity

- Page 2, line 35 – "0,5" should be changed to "0.5"

- Page 3, lines 1, 2, 4, 6-8 – "0,125", "0,25", "0,5", and "0,75" should be

  changed to "0.125", "0.25", "0.5", and "0.75", respectively

- Page 3, lines 28-29 – Applicant states, "It is expressively referred to both

  documents." Please clarify if this statement is being used to

  communicate these documents are "incorporated by reference." If so,

  please amend this statement to expressly include the words "incorporate"

  and "reference." See 37 CFR 1.57(b)-(g).

- Page 7, line 26 – "...device. I.e. to each color...of a pixel separate" should

  be "...device, **i.e.,** to each color...of a pixel, separate..."

- Page 11, lines 28-30 – Applicant states, "It is expressively referred to...."

  Please clarify if this statement is being used to communicate this

document is "incorporated by reference." If so, please amend this

statement to expressly include the words "incorporate" and "reference."

See 37 CFR 1.57(b)-(g).

Appropriate correction is required.

Claim Objections

4.   Claims 1 and 8 are objected to because of the following informalities:

Lines 3 and 7 of both claims are extraneous spaces. These spaces make it

unclear if the lines (4-6) contained between them are part of the preamble or are, in fact,

limitations of the claim. If these are intended to be claim limitations, they should be

rewritten in such a way as to more clearly show them as limitations. If they are only

intended to be part of the preamble, the spaces should be removed.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6.   Claim 16 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply

with the enablement requirement. The claim(s) contains subject matter which was not

described in the specification in such a way as to enable one skilled in the art to which it

pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 16 discloses "controlling means connected to said dithering means for controlling

said dithering means temporally in dependence frames of said video data." However,

the specification gives no details to support the statement that the controlling means

controls the dithering means "temporally in dependence frames of said video data."

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 1-2, 6-7, 8-9, and 13-14 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lin (6,421,466) in view of Mikoshiba et al. (5,907,316).

9.   In regards to claim 1, Lin discloses a method for processing video data (abstract;

column 6, lines 26-31) for display on a display device having a plurality of luminous

elements (column 5, lines 61-64 disclose the display as having luminous elements) by

applying a dithering function to at least part of said video data to refine the grey scale

portrayal of video pictures of said video data (col. 8, lines 18-23), said method

comprising the steps of computing at least one motion vector from said video data (col.

6, line 40 through col. 17 disclose the details of the motion vector computation). While

Lin clearly discloses using the motion vector computation from said video data and Lin

further discloses dithering of the motion vector, Lin does not specifically disclose

wherein the phase, amplitude, spatial and/or temporal resolution of the dithering

function change in accordance with the motion vector. Mikoshiba et al. discloses a method and apparatus for displaying half-tone [dithered] images wherein the spatial resolution of said dithering function is changed in accordance with said at least one motion vector when applying the dithering function to said video data (col. 2, line 60 through col. 3, line 5 disclose the spatial change; col. 3, lines 26-38 disclose the temporal changes). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin and Mikoshiba to achieve a system and method for processing video data for display wherein a motion vector is computed and used to change the spatial and/or temporal resolution of the video in order to provide a method of displaying dynamic dithered [half-toned] images without disturbance and deteriorated display quality.

10.   In regards to claim 2, the combination of Lin and Mikoshiba disclose the method according to claim 1, as contained hereinabove. In addition, the combination discloses wherein said dithering function includes two spatial dimensions and one temporal dimension (Fig 12A; col. 11, line 6 through col. 12, line 67 disclose the calculation wherein the x and y coordinates are the spatial dimensions and the frame-to-frame is the temporal dimension; see also col. 3, lines 39-50). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin and Mikoshiba to achieve a system and method for processing video data for display wherein a motion vector is computed and used to change the spatial and/or temporal resolution of the video in order to provide a method of displaying

dynamic dithered [half-toned] images without disturbance and deteriorated display

quality.

11.   In regards to claim 6, the combination of Lin and Mikoshiba disclose the method

according to claim 1, as contained hereinabove. In addition, Lin discloses wherein said

at least one motion vector is defined for each pixel or cell individually (col. 6, line 40

through col. 7, line 17 disclose the details of the motion vector computation for each

pixel).

12.   In regards to claim 7, the combination of Lin and Mikoshiba disclose the method

according to claim 1, as contained hereinabove. In addition, the combination discloses

wherein said at least one motion vector has two spatial dimensions (Mikoshiba: Figures

10 and 11; col. 11, lines 31-59). It would have been obvious to one skilled in the art to

which it pertains at the time the invention was made to integrate the teachings of Lin

and Mikoshiba to achieve a system and method for processing video data for display

wherein a motion vector is computed and used to change the spatial and/or temporal

resolution of the video in order to provide a method of displaying dynamic dithered [half-

toned] images without disturbance and deteriorated display quality.

13.   In regards to claim 8, Lin discloses a device for processing video data (abstract;

column 6, lines 26-31) for display on a display device having a plurality of luminous

elements (column 5, lines 61-64 disclose the display as having luminous elements)

including dithering means (col. 8, lines 18-23) for applying a dithering function to at least

a part of said video data refine the grey scale portrayal of video pictures of said video

data, wherein, it comprises motion estimations means connected to said dithering

means (col. 6, line 40 through col. 17 disclose the details of the motion vector

computation). While Lin clearly discloses using the motion vector computation from

said video data and Lin further discloses dithering of the motion vector, Lin does not

specifically disclose wherein the phase, amplitude, spatial and/or temporal resolution of

the dithering function change in accordance with the motion vector. Mikoshiba et al.

discloses a method and apparatus for displaying half-tone [dithered] images wherein the

spatial resolution of said dithering function is changed in accordance with said at least

one motion vector when applying the dithering function to said video data (col. 2, line 60

through col. 3, line 5 disclose the spatial change; col. 3, lines 26-38 disclose the

temporal changes). It would have been obvious to one skilled in the art to which it

pertains at the time the invention was made to integrate the teachings of Lin and

Mikoshiba to achieve a system and method for processing video data for display

wherein a motion vector is computed and used to change the spatial and/or temporal

resolution of the video in order to provide a method of displaying dynamic dithered [half-

toned] images without disturbance and deteriorated display quality.

14.   In regards to claim 9, the combination of Lin and Mikoshiba disclose the device

according to claim 8, as contained hereinabove. In addition, the combination discloses

wherein said dithering function used by said dithering means including two spatial

dimensions and a temporal dimension (Fig 12A; col. 11, line 6 through col. 12, line 67

disclose the calculation wherein the x and y coordinates are the spatial dimensions and

the frame-to-frame is the temporal dimension; see also col. 3, lines 39-50). It would

have been obvious to one skilled in the art to which it pertains at the time the invention

was made to integrate the teachings of Lin and Mikoshiba to achieve a system and method for processing video data for display wherein a motion vector is computed and used to change the spatial and/or temporal resolution of the video in order to provide a method of displaying dynamic dithered [half-toned] images without disturbance and deteriorated display quality.

15.   In regards to claim 13, the combination of Lin and Mikoshiba disclose the device according to claim 8, as contained hereinabove. In addition, Lin discloses wherein said at least one motion vector is definable for each pixel individually by said motion estimation means (col. 6, line 40 through col. col. 7, line 17 disclose the details of the motion vector computation for each pixel by the motion estimation means).

16.   In regards to claim 14, the combination of Lin and Mikoshiba disclose the device according to claim 8, as contained hereinabove. In addition, the combination discloses wherein said at least one motion vector includes two spatial dimensions (Mikoshiba: Figures 10 and 11; col. 11, lines 31-59). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin and Mikoshiba to achieve a system and method for processing video data for display wherein a motion vector is computed and used to change the spatial and/or temporal resolution of the video in order to provide a method of displaying dynamic dithered [half-toned] images without disturbance and deteriorated display quality.

17.   Claims 3-5, 10-12, and 15 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Lin (6,421,466) in view of Mikoshiba et al. (5,907,316) and in further

view of Correa et al. (European Patent Application: EP1136974 A1).

18.   In regards to claim 3, the combination of Lin and Mikoshiba discloses the method

according to claim 1. While the combination of Lin and Mikoshiba discloses the

dithering function, the combination does not specifically disclose wherein the dithering

function includes the application of a plurality of masks. Correa discloses a method for

processing video data for display on a display device wherein dithering is applied and

the dithering function includes the application of a plurality of masks (page 9, paragraph

0038). It would have been obvious to one skilled in the art to which it pertains at the

time the invention was made to integrate the teachings of Lin, Mikoshiba, and Correa in

order to provide a system and method which is more optimally useful in a plasma

display panel to improve the quality of the display image.

19.   In regards to claim 4, the combination of Lin and Mikoshiba discloses the method

according to claim 1. While the combination of Lin and Mikoshiba discloses the

dithering function, the combination does not specifically disclose wherein said applying

of said dithering function is based on single luminous elements called cells of said

display device. Correa discloses a system and method for processing video data for

display on a display device wherein said applying of said dithering function is based on

single luminous elements called cells of said display device (page 2, paragraph 0011;

page 3, paragraph 0012). It would have been obvious to one skilled in the art to which it

pertains at the time the invention was made to integrate the teachings of Lin, Mikoshiba,

and Correa in order to provide a system and method which is more optimally useful in a plasma display panel to improve the quality of the display image.

20.   In regards to claim 5, the combination of Lin and Mikoshiba discloses the method according to claim 1. While the combination of Lin and Mikoshiba discloses the dithering function, the combination does not specifically disclose wherein said dithering is a 1-, 2-, 3-, and/or 4-bit dithering function. Correa discloses a method for processing video data for display on a display device wherein said dithering is a 1-, 2-, 3-, and/or 4-bit dithering function (page 9, paragraph 0038). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin, Mikoshiba, and Correa in order to provide a system and method which is more optimally useful in a plasma display panel to improve the quality of the display image.

21.   In regards to claim 10, the combination of Lin and Mikoshiba discloses the device according to claim 8. While the combination of Lin and Mikoshiba discloses the dithering function, the combination does not specifically disclose wherein the dithering function includes the application of a plurality of masks. Correa discloses a system and method for processing video data for display on a display device wherein dithering is applied and the dithering function includes the application of a plurality of masks (page 9, paragraph 0038). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin, Mikoshiba, and Correa in order to provide a system and method which is more optimally useful in a plasma display panel to improve the quality of the display image.

22.   In regards to claim 11, the combination of Lin and Mikoshiba discloses the device according to claim 8. While the combination of Lin and Mikoshiba discloses the dithering function, the combination does not specifically disclose wherein said applying of said dithering function is based on single luminous elements called cells of said display device. Correa discloses a system and method for processing video data for display on a display device wherein said applying of said dithering function is based on single luminous elements called cells of said display device (page 2, paragraph 0011; page 3, paragraph 0012). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin, Mikoshiba, and Correa in order to provide a system and method which is more optimally useful in a plasma display panel to improve the quality of the display image.

23.   In regards to claim 12, the combination of Lin and Mikoshiba discloses the device according to claim 8. While the combination of Lin and Mikoshiba discloses the dithering function, the combination does not specifically disclose wherein said dithering is a 1-, 2-, 3-, and/or 4-bit dithering function. Correa discloses a system and method for processing video data for display on a display device wherein said dithering is a 1-, 2-, 3-, and/or 4-bit dithering function (page 9, paragraph 0038). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin, Mikoshiba, and Correa in order to provide a system and method which is more optimally useful in a plasma display panel to improve the quality of the display image.

24.   In regards to claim 15, the combination of Lin and Mikoshiba discloses the device

according to claim 8. While the combination of Lin and Mikoshiba discloses the

dithering function, the combination does not specifically disclose wherein the system

further includes gamma function means connected to said dithering means, so that the

input signals of said dithering means are pre-corrected by a gamma function.   Correa

discloses a system and method for processing video data for display on a display

device wherein a gamma function means is connected to said dithering means (Fig. 4,

Item 10). It would have been obvious to one skilled in the art to which it pertains at the

time the invention was made to integrate the teachings of Lin, Mikoshiba, and Correa in

order to provide a system and method which is more optimally useful in a plasma

display panel to improve the quality of the display image.
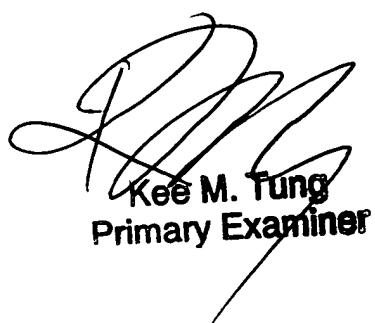

Conclusion

25.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure. In R. van Dijk and T. Holtslag, "Motion Compensation in Plasma

Displays", Proceedings of the IDW 1998, page 543, motion vectors from a video

sequence are used to reduce motion artifacts. Basically, all subfields are shifted on the

motion vectors to make sure that the human eye will integrate all subfields in a correct

way. This algorithm can give very good moving picture quality, but its implementation is

very complex.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alysa N. Brautigam whose telephone number is 571-272-7780. The examiner can normally be reached on 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

anb

Kee M. Tung
Primary Examiner